WEST

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L19: Entry 10 of 12 File: DWPI Mar 26, 1988

DERWENT-ACC-NO: 1988-123531
DERWENT-WEEK: 198818

TITLE: Arachidonic acid-contg. lipid prepn. - by incubating Mortierella mould fungi in potato medium, and isolating lipid from fungi

PATENT-ASSIGNEE:

ASSIGNEE	CODE
LION CORP	LIOY

PRIORITY-DATA: 1986JP-0211267 (September 8, 1986), 1986JP-0211207 (September 8, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 63068090 A	March 26, 1988	N/A	005	N/A
JP 95016423 B2	March 1, 1995	N/A	004	C12P007/64

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP63068090A	September 8, 1986	1986JP-0211207	N/A
JP95016423B2	September 8, 1986	1986JP-0211267	N/A
JP95016423B2		JP63068090	Based on

INT-CL (IPC): C12N 1/14; C12P 7/64; C12R 1/64; C12P 7/64; C12R 1/645

ABSTRACTED-PUB-NO: JP63068090A
BASIC-ABSTRACT:

Mortierella mould fungi are incubated in potato solid medium so that fungi having an arachidonic acid-contg. lipid are grown in the medium. The arachidonic acid-contg. lipid is then isolated from the fungi. To increase the yield, a divalent metal atom is pref. added to the medium.

Mould fungi are typically as follows: Mortierella alipina IFO 8568 (ATCC 16266, ATCC 32221, ATCC 42430), Mortierella bainieri IFO 8569, Mortierella elongata IFO 8570, Mortierella exigua IFO 8571, Mortierella minutissima IFO 8573, Mortierella

verticillata IFO 8575, Mortierella hygrophila IFO 5941, Mortierella polycephala IFO 6335. The divalent metal is typically Ca2+ and Mg2+, and the amt. to be added to the medium (potato) is 0.02-2 g/kg for Ca2+ and 0.01-5 g/kg for Mg2+.

USE/ADVANTAGE - The arachidonic acid content is high, and isolation and purificn. of the arachidonic acid formed is easy.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: ARACHIDONIC ACID CONTAIN LIPID PREPARATION INCUBATE MORTIERELLA MOULD FUNGUS POTATO MEDIUM ISOLATE LIPID FUNGUS

DERWENT-CLASS: B05 D16 E17

CPI-CODES: B04-B01B; B10-C04E; D05-C09; E10-C04H;

CHEMICAL-CODES:

Chemical Indexing M1 *01*
Fragmentation Code
M423 M720 M903 N132 Q233 V772
Registry Numbers
3102R 1678D

Chemical Indexing M2 *02*
Fragmentation Code
H7 H723 J0 J011 J1 J171 M226 M231 M262 M281
M320 M416 M720 M903 M904 N132 Q233
Specfic Compounds
04038P
Registry Numbers
3102R 1678D

Chemical Indexing M3 *02*
Fragmentation Code
H7 H723 J0 J011 J1 J171 M226 M231 M262 M281
M320 M416 M720 M903 M904 N132 Q233
Specfic Compounds
04038P
Registry Numbers
3102R 1678D

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C1988-055387

WEST

Generate Collection

L19: Entry 3 of 12 File: JPAB Jan 19, 1988

PUB-NO: JP363012290A
DOCUMENT-IDENTIFIER: JP 63012290 A
TITLE: PRODUCTION OF LIPID CONTAINING ARACHIDONIC ACID

PUBN-DATE: January 19, 1988

INVENTOR-INFORMATION:

NAME	COUNTRY
TOTANI, EISEI	
SUNAZAKI, KAZUHIKO	
KUDO, TOSHIHIRO	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
LION CORP	N/A

APPL-NO: JP61212168
APPL-DATE: September 9, 1986

INT-CL (IPC): C12P 7/64

ABSTRACT:

PURPOSE: To obtain a lipid rich in arachidonic acid useful as a precursor of prostaglandin, thromboxane, etc., by culturing a specific microbial strain belonging to Mortierella genus.

CONSTITUTION: A microbial strain belonging to Mortierella genus and selected from Mortierella alpina, bainieri, elongata, exigua, minutissima, verticillata, hygrophila and polycephala is cultured in a solid-liquid medium by standing culture, shaking culture, aeration and agitation culture, etc. The microbial cells are separated from the cultured product, disintegrated by mechanical or physical means and extracted with a solvent, supercritical carbon dioxide, etc., to obtain a lipid rich in arachidonic acid. The culture is preferably carried out at an initial pH of 4.0∼7.0 at 10∼33°C, especially 20∼30°C for 2∼20 days.

WEST

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L19: Entry 8 of 12 File: DWPI Jun 3, 1994

DERWENT-ACC-NO: 1994-220517
DERWENT-WEEK: 199427

TITLE: Prodn. of highly unsatd. fatty acids and lipid(s) - by aerobic culture of Mortierella microorganism in liq. medium contg. dissolved oxygen

PATENT-ASSIGNEE:

ASSIGNEE	CODE
SUNTORY LTD	SUNR

PRIORITY-DATA: 1992JP-0305523 (November 16, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06153970 A	June 3, 1994	N/A	007	C12P007/64

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP06153970A	November 16, 1992	1992JP-0305523	N/A

INT-CL (IPC): C12P 7/64; C12P 7/64; C12R 1/645

ABSTRACTED-PUB-NO: JP06153970A
BASIC-ABSTRACT:

Prodn. is effected by aerobic culture of microorganisms of Mortierella subgenera in a liq. medium under 5-28 (5-20) ppm of dissolved oxygen, partic. (1) under pressure and (2) aeration with O2 rich air.

Specifically, subgenera of Mortierella e.g. M. elongata IFO8570, M. exigua IFO8571, or M. alpina IFO8568, and their mutants are cultured in a medium contg. 12-20C hydrocarbons, fatty acids and their esters as substrates under 5-28 (5-20) ppm of dissolved oxygen (DO) under 0.4-3, (0.8-2) kg/cm2G with aeration with O2 enriched air at 5-40 (20-30) deg.C, pH 4-10 (6-9) for 2-10 days.

USE/ADVANTAGE - Highly unsatd. fatty acids e.g. omega-3, omega-6 and omega-9 series including arachidonic acid (ARA), dihomo-gamma-linoleni c acid (DGLA) and eicosapentaenoic acid

(EPA) are produced in amt. of up to 1.2-1.8 times the amt. produced in conventional methods.

In an example, in 100 ml of a pasteurised medium contg. 2% glucose and 1% yeast extract, pH 6.3, a loopful of M. alpina IFO8568 was inoculated and aerobically cultured at 28 deg.C for 4 days. The obtd. mixt. was inoculated to 25 l of the medium and cultured under aeration with air contg. 41% O2 at 28 deg.C for 7 days. The cultured cells were collected and total lipid was extracted and esterified with anhydrous MeOH-HCl. The esterified fatty acids contained 3.80 g/l of ARA and 0.38 g/l of DGLA, while control gp. aerated with normal air gave corresp. rates of 2.61 and 0.20 g/l, respectively.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: PRODUCE HIGH UNSATURATED FATTY ACID LIPID AEROBIC CULTURE MORTIERELLA MICROORGANISM LIQUID MEDIUM CONTAIN DISSOLVE OXYGEN

ADDL-INDEXING-TERMS:
OXYGEN@

DERWENT-CLASS: D16 D23 E17

CPI-CODES: D05-C; D10-A01; E10-C04H;

CHEMICAL-CODES:

Chemical Indexing M3 *01*
Fragmentation Code
H7 H714 H721 H723 J0 J011 J1 J171 M210 M211
M212 M213 M214 M215 M216 M220 M221 M222 M223 M224
M225 M226 M231 M232 M233 M262 M281 M320 M416 M720
M903 M904 N131 N132 N411 N425 N511 N512 N513 N520
N521 N522 Q271
Markush Compounds
199427-B3801-P

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0038S

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C1994-100247

WEST

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L19: Entry 11 of 12 File: DWPI Mar 16, 1999

DERWENT-ACC-NO: 1988-094817
DERWENT-WEEK: 199929

TITLE: Arachidonic acid prepn. - by culturing Mortierella microbe showing arachidonic acid productivity, and recovering the acid from microbial body

INVENTOR: SHIMIZU, S; SHINMEN, Y ; YAMADA, H

PATENT-ASSIGNEE:

ASSIGNEE	CODE
SUNTORY LTD	SUNR

PRIORITY-DATA: 1986JP-0071270 (March 31, 1986), 1987JP-0015920 (January 28, 1987)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
CA 1340433 C	March 16, 1999	N/A	000	C12P007/64
JP 63044891 A	February 25, 1988	N/A	007	N/A
EP 276541 A	August 3, 1988	E	000	N/A
EP 276541 B1	March 24, 1993	E	009	C12P007/64
US 5204250 A	April 20, 1993	N/A	005	C12P007/64
DE 3785023 G	April 29, 1993	N/A	000	C12P007/64
ES 2039451 T3	October 1, 1993	N/A	000	C12P007/64
JP 95034752 B2	April 19, 1995	N/A	005	C12P007/64
EP 276541 B2	August 26, 1998	E	000	C12P007/64

DESIGNATED-STATES: AT BE CH DE ES FR GB GR IT LI LU NL SE AT BE CH DE ES FR GB GR IT LI LU NL SE AT BE CH DE ES FR GB GR IT LI LU NL SE

CITED-DOCUMENTS:5.Jnl.Ref; A3...8930 ; EP 155420 ; EP 207475 ; EP 223960 ; JP52064484 ; JP59130191 ; JP61177990 ; No-SR.Pub ; JP 6177990

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
CA 1340433C	March 10, 1987	1987CA-0531638	N/A
JP63044891A	January 28, 1987	1987JP-0015920	N/A
EP 276541A	September 30, 1987	1987EP-0308690	N/A
EP 276541B1	September 30, 1987	1987EP-0308690	N/A
US 5204250A	March 6, 1987	1987US-0022820	Cont of
US 5204250A	September 26, 1990	1990US-0588473	N/A
DE 3785023G	September 30, 1987	1987DE-3785023	N/A
DE 3785023G	September 30, 1987	1987EP-0308690	N/A
DE 3785023G		EP 276541	Based on
ES 2039451T3	September 30, 1987	1987EP-0308690	N/A
ES 2039451T3		EP 276541	Based on
JP95034752B2	January 28, 1987	1987JP-0015920	N/A
JP95034752B2		JP63044891	Based on
EP 276541B2	September 30, 1987	1987EP-0308690	N/A

INT-CL (IPC): C12N 1/38; C12P 1/02; C12P 7/40; C12P 7/64; C12R 1/64; C12P 7/64; C12R 1/645

RELATED-ACC-NO: 1997-335997

ABSTRACTED-PUB-NO: EP 276541B
BASIC-ABSTRACT:

Method comprises (a) culturing the microbe which belongs to Mortierella and shows the productivity for arachidonic acid, for forming arachidonic acid or the lipid contg. arachidonic acid and (b) recovering arachidonic acid from microbial body.

Pref. M. elongata IFO 8570, M. exigua IFO 8571, M. hygrophila IFO 5941, etc. can also be used. As carbon source glucose, fructose, soluble starch, molasses, etc. can be used and as nitrogen source peptone, yeast, malt or beef-extract, csl, etc. can be used. For increasing the yield of arachidonic acid it is pref. to add hydrocarbon (e.g. hexa or octadecane, etc.), fatty acid (e.g. oleic- or linlic-acid, etc.), its salt or oil and fat (e.g. olive-, cotton seed- or coconut-oil, etc.) in culture medium before or during fermentation continuously or intermittently.

USE/ADVANTAGE - Microbes belonging to Penicillium, Aspergillus, etc. can produce arachidonic acid, but the productivity for arachidonic acid of the microbe belonging to Mortierella has not been known. Mortierella elongata SAM 0219 (FERM P-1239) is sepd. from soil and by using it arachidonic acid can be prepd. with high yield using inexpensive culture medium in a short fermenting time.
ABSTRACTED-PUB-NO:

JP63044891A
EQUIVALENT-ABSTRACTS:

Method comprises (a) culturing the microbe which belongs to Mortierella and shows the productivity for arachidonic acid, for forming arachidonic acid or the lipid contg. arachidonic acid and (b) recovering arachidonic acid from microbial body.

Pref. M. elongata IFO 8570, M. exigua IFO 8571, M. hygrophila IFO 5941, etc. can also be used. As carbon source glucose, fructose, soluble starch, molasses, etc. can be used and as nitrogen source peptone, yeast, malt or beef-extract, csl, etc. can be used. For increasing the yield of arachidonic acid it is pref. to add hydrocarbon (e.g. hexa or octadecane, etc.), fatty acid (e.g. oleic- or linlic-acid, etc.), its salt or oil and fat (e.g. olive-, cotton seed- or coconut-oil, etc.) in culture medium before or during fermentation continuously or intermittently.

USE/ADVANTAGE - Microbes belonging to Penicillium, Aspergillus, etc. can produce arachidonic acid, but the productivity for arachidonic acid of the microbe belonging to Mortierella has not been known. Mortierella elongata SAM 0219 (FERM P-1239) is sepd. from soil and by using it arachidonic acid can be prepd. with high yield using inexpensive culture medium in a short fermenting time.

US 5204250A

Prodn. of arachidonic acid or a lipid contg. arachidonic acid comprises propagation of Mortierella elongata IFO 8570 or SAM-0219 (FERM BP-1239), M. exigua IFO 8571 or M. hygrophila IFO 5941 in the presence of the usual nutrients and one or more precursors, e.g. n-hexadecane, n-octadecane, oleic acid salts, linolenic acid salt, linoleic acid salts, olive oil, corn oil, coconut oil, soyabean oil and linseed oil; then recovery of the arachidonic acid or its lipid cpd. from the medium. ADVANTAGE - The process is more rapid than previous fermentation methods and gives improved yields.

CHOSEN-DRAWING: Dwg.0/0 Dwg.0/0

TITLE-TERMS: ARACHIDONIC ACID PREPARATION CULTURE MORTIERELLA MICROBE ARACHIDONIC ACID PRODUCE RECOVER ACID MICROBE BODY

DERWENT-CLASS: B05 D16 E17

CPI-CODES: B10-C04E; B11-A; D05-C09; E10-C04H;

CHEMICAL-CODES:

Chemical Indexing M2 *01*
Fragmentation Code
H7 H723 J0 J011 J1 J171 M226 M231 M262 M281
M320 M416 M720 M903 M904 N132 N512 N513 Q233
Specfic Compounds
04038P
Registry Numbers
3102R

Chemical Indexing M3 *01*
Fragmentation Code
H7 H723 J0 J011 J1 J171 M226 M231 M262 M281
M320 M416 M720 M903 M904 N132 N512 N513 Q233
Specfic Compounds
04038P
Registry Numbers
3102R

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C1988-042623

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L19: Entry 12 of 12 File: DWPI Jun 3, 1987

DERWENT-ACC-NO: 1987-151555
DERWENT-WEEK: 198722

TITLE: Prodn. of arachidonic acid contg. lipid(s) for economic acid recovery - comprises cultivating Mortierella strain in culture medium and recovering lipid(s) from the cells

INVENTOR: KUDO, T; SUZAKI, K ; TOTANI, N ; TUDO, T

PATENT-ASSIGNEE:

ASSIGNEE	CODE
LION CORP	LIOY

PRIORITY-DATA: 1986JP-0073450 (March 31, 1986), 1985JP-0218558 (October 1, 1985)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 223960 A	June 3, 1987	E	019	N/A
DE 3686026 G	August 20, 1992	N/A	000	C12P007/64
EP 223960 B1	July 15, 1992	E	018	C12P007/64
JP 63012290 A	January 19, 1988	N/A	000	N/A
JP 95016424 B2	March 1, 1995	N/A	006	C12P007/64

DESIGNATED-STATES: AT BE CH DE FR GB IT LI NL SE AT BE CH DE FR GB IT LI NL SE

CITED-DOCUMENTS:2.Jnl.Ref; A3...8840 ; EP 125764 ; EP 155420 ; JP57144986 ; JP59130191 ; No-SR.Pub

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 223960A	September 23, 1986	1986EP-0113088	N/A
DE 3686026G	September 23, 1986	1986DE-3686026	N/A
DE 3686026G	September 23, 1986	1986EP-0113088	N/A
DE 3686026G		EP 223960	Based on
EP 223960B1	September 23, 1986	1986EP-0113088	N/A
JP63012290A	September 9, 1986	1986JP-0212168	N/A
JP95016424B2	September 9, 1986	1986JP-0212168	N/A
JP95016424B2		JP63012290	Based on

INT-CL (IPC): C12P 7/64; C12R 1/64; C12P 7/64; C12R 1/645

ABSTRACTED-PUB-NO: DE 3686026G
BASIC-ABSTRACT:

Prodn. of avachidonic acid-contg. lipids (I) comprises (a) cultivating Mortierella alpina, baimieri, elongata, exigua, minutissima, verticillata, hygrophilia or polycephala in a nutrient medium; (b) collecting the cells; and (c) isolating (I) from the cells.

A solid culture medium contg. a whole tuber, e.g. a potato, tamo, sweet potato, cassava, youn or Jerusalem artichoke, may be used. Typically 1 pt. potato and 0-2 pts. water, both by wt., is used, with 0-20 wt.5 carbohydrate based on whole medium. The solid medium pref also contain a divalent Ca or Mg ion, e.g. at 0.01-5g/kg medium. When a liq. medium is used, it may also contain a tuber, e.g. at 0.3-2 wt.pts. potato pen 1 wt. pt. water. Similarly carbohydrate, Ca or Mg ions may be present. Cultivation is at 10-33 deg.C for 2-20 days in a medium initially at pH 4-7.

USE/ADVANTAGE - The cells have a high content of (I) and arachidonic acid (II) of good purity can be recovered easily in high yield from (I). The procedure gives (I) economically and it can be used on a large scale. (I) is useful in the direct biochemical prodn. of proztaglandin-related cpds. such as prostaglandins, thromboxanes, prostacyclin, leukotrienes etc.
ABSTRACTED-PUB-NO:

EP 223960A
EQUIVALENT-ABSTRACTS:

Prodn. of avachidonic acid-contg. lipids (I) comprises (a) cultivating Mortierella alpina, baimieri, elongata, exigua, minutissima, verticillata, hygrophilia or polycephala in a nutrient medium; (b) collecting the cells; and (c) isolating (I) from the cells.

A solid culture medium contg. a whole tuber, e.g. a potato, tamo, sweet potato, cassava, youn or Jerusalem artichoke, may be used. Typically 1 pt. potato and 0-2 pts. water, both by wt., is used, with 0-20 wt.5 carbohydrate based on whole

medium. The solid medium pref also contain a divalent Ca or Mg ion, e.g. at 0.01-5g/kg medium. When a liq. medium is used, it may also contain a tuber, e.g. at 0.3-2 wt.pts. potato pen 1 wt. pt. water. Similarly carbohydrate, Ca or Mg ions may be present. Cultivation is at 10-33 deg.C for 2-20 days in a medium initially at pH 4-7.

USE/ADVANTAGE - The cells have a high content of (I) and arachidonic acid (II) of good purity can be recovered easily in high yield from (I). The procedure gives (I) economically and it can be used on a large scale. (I) is useful in the direct biochemical prodn. of proztaglandin-related cpds. such as prostaglandins, thromboxanes, prostacyclin, leukotrienes etc.

EP 223960B

Prodn. of arachidonic acid-contg. lipids (I) comprises (a) cultivating Mortierella alpina, baimieri, elongata, exigua, minutissima, verticillata, hygrophilia or polycephala in a nutrient medium; (b) collecting the cells; and (c) isolating (I) from the cells.

A solid culture medium contg. a whole tuber, e.g. a potato, tamo, sweet potato, cassava, youn or Jerusalem artichoke, may be used. Typically 1 pt. potato and 0-2 pts. water, both by wt., is used, with 0-20 wt.5 carbohydrate based on whole medium. The solid medium pref also contain a divalent Ca or Mg ion, e.g. at 0.01-5g/kg medium. When a liq. medium is used, it may also contain a tuber, e.g. at 0.3-2 wt.pts. potato pen 1 wt. pt. water. Similarly carbohydrate, Ca or Mg ions may be present. Cultivation is at 10-33 deg.C for 2-20 days in a medium initially at pH 4-7.

USE/ADVANTAGE - The cells have a high content of (I) and arachidonic acid (II) of good purity can be recovered easily in high yield from (I). The procedure gives (I) economically and it can be used on a large scale. (I) is useful in the direct biochemical prodn. of proztaglandin-related cpds. such as prostaglandins, thromboxanes, prostacyclin, leukotrienes etc. (19pp DWg.No.0/0)

TITLE-TERMS: PRODUCE ARACHIDONIC ACID CONTAIN LIPID ECONOMY ACID RECOVER COMPRISE CULTIVATE MORTIERELLA STRAIN CULTURE MEDIUM RECOVER LIPID CELL

DERWENT-CLASS: B05 C03 D16

CPI-CODES: B04-B01B; B10-C04E; C04-B01B; C10-C04E; D05-C09;

CHEMICAL-CODES:

Chemical Indexing M1 *02*
Fragmentation Code
M423 M431 M720 M782 M903 N131 N136 N421 N425 N512
N513 Q233 V772
Registry Numbers
87140 1286M

US 093317590CP1

Creation date: 12-17-2003
Indexing Officer: AJENKINS2 - ASHUNTA JENKINS
Team: OIPEBackFileIndexing
Dossier: 09331759

Legal Date: 04-13-2001

No.	Doccode	Number of pages
1	CTNF	7
2	1449	1

Total number of pages: 8

Remarks:

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